

CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)Applicant(s): **Kishore C. Acharya et al.**

Docket No.

121800/GEM-0007

Application No.

10/063,840

Filing Date

May 17, 2002

Examiner

Jung, William C.

Customer No.

23413

Group Art Unit

3737

Invention: **A METHOD AND SYSTEM FOR ASSOCIATING AN EKG WAVEFORM WITH A CT IMAGE****RECEIVED****JUL 07 2006****BOARD OF PATENT APPEALS
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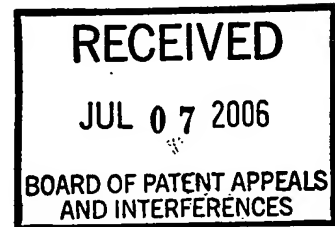
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No.: 10/063,840 : Confirmation No.: 7974
Appellants: Kishore C. Acharya et al. : Group Art Unit: 3737
Filed: May 17, 2002 : Examiner: Jung, William C.
Docket No.: 121800/GEM-0007 :

For: A METHOD AND SYSTEM FOR ASSOCIATING AN EKG WAVEFORM WITH A
CT IMAGE

June 28, 2006

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450



REPLY BRIEF

With Regard To Examiner's Answer, (9) Grounds of Rejection

The Examiner has responded to Appellant's brief by stating that "Heuscher et al anticipates [the limitation of *communicating* an exposure marker-in-signal *to* said electrocardiogram device such that said exposure marker-in-signal is associated with the EKG waveform data] *since the CT image acquisition is gated by ECG or EKG* where the gating provides specific phase, in other words, marker in the ECG or EKG." Examiner's Answer, page 3. (Emphasis added).

The Examiner further states that the "Heuscher et al device *inherently* disclose[s]" the claimed limitations, and that the "Heuscher et al's scanning *includes specific protocol* where the *control of the CT scan* use[s] [a] look up table to assess patient characteristic ECG, i.e. ECG waveform and phase in which the CT scan acquires the images (col. 5, line 61 - col. 6, line 9)." Examiner's Answer, page 3. (Emphasis added).

The Examiner yet further states that "Heuscher et al *clearly* anticipate[s] [the limitation of *communicating an exposure marker-in-signal to the EKG monitoring device*] *since the CT protocol monitors the ECG or EKG data*, i.e. communicates with the ECG or EKG to obtain the

phase information of the patient to control the CT scanning (col. 5, lines 54-60).” Examiner’s Answer, page 3. (Emphasis added).

Appellant respectfully disagrees with the Examiner’s position and rejection based thereon for the following reasons.

I. Heuscher Fails to Disclose Each And Every Element Of The Claimed Invention Arranged As Claimed And Is Therefore Deficient In Establishing A Prima Facie Case of Anticipation

Appellant respectfully submits that Heuscher discloses communication *from* the EKG *to* the CT (such as is the case with a CT gated by EKG), but does not specifically disclose communication of a marker-in-signal *from* the CT *to* the EKG.

Appellant further respectfully submits that *the control of a CT scan* via a specific protocol using a look up table to assess patient characteristic ECG, is by itself insufficient to *anticipate* a communication of a marker-in-signal *from* the CT *to* the EKG.

Appellant submits that Heuscher, by disclosing that the CT is gated by the EKG, specifically discloses communication *from* the EKG *to* the CT, but does not specifically disclose communication *from* the CT *to* the EKG device after scanning has commenced and the association of *the actual CT exposure* with the EKG waveform.

In Heuscher, Appellant finds the EKG to be used as a reference to begin a CT scan exposure only. Appellant does not find Heuscher to explicitly or implicitly disclose the CT scanner communicating to the EKG device with a scan protocol that results in *the actual CT exposure* being communicated after scanning has commenced to the EKG device via an exposure marker-in-signal *so as to overlay the EKG waveform data*. Simply tagging the CT data with EKG waveform data is not the same as *overlaying the EKG waveform with actual CT exposure data*, as timing delays in one direction of communication are not necessarily the same as those in the other direction of communication.

In order for an anticipation rejection to stand, and specifically for an inherency anticipation rejection to stand, the Examiner must show that the prior art reference *necessarily* includes the claimed limitations arranged as claimed. With respect to Heuscher, Appellant submits that an EKG-gated CT scanning protocol does not *necessarily* include the communication of an exposure marker-in-signal, signifying *the actual CT exposure, from* the CT *to* the EKG device, so as to *overlay the EKG waveform data with the actual CT event*

signal.

II. The Examiner Appears To Have Mischaracterized The Claimed Invention By Reading Out Of The Claim A Limitation That Cannot Be Disregarded

The Examiner remarks, “the so-called ‘exposure marker-in signal’ (which is merely [a] triggering event) is necessary in order for the images and ECG/EKG data to be correlated. Otherwise, the imaging system’s reconstruction is blind to the cardiac phase, thus image reconstruction cannot be made based on the cardiac phase without the triggering event.” Examiner’s Answer, page 6.

Appellant respectfully disagrees with the Examiner’s characterization that the exposure marker-in signal is “merely a triggering event”.

At Paragraph [0023-0025] of the application as originally filed, Appellant describes an R marker-in signal 226, which is also referred to as a defibrillator sync signal, followed by a description of the operation of the CT imaging system 4, followed by the generation of an exposure marker-in signal 228 that is generated after the CT imaging system 4 begins to operate. As such, and contrary to the Examiner’s characterization of the claimed invention, Appellant has described *an exposure marker-in signal that is a result of and a consequence of an operating CT imaging system after it has already received a triggering event*. At Paragraph [0025], Appellant goes on to describe the purpose of the exposure marker-in signal being to indicate the actual start of a CT scan at the EKG device after it has been communicated from the CT to the EKG and overlaid on the EKG waveform data.

Contrary to the Examiner’s characterization of the claimed invention, the exposure marker-in signal is not a triggering event, but quite the opposite, is in response to a triggering event.

Conclusion

In summary, Appellant respectfully submits that Heuscher does not disclose all of the claimed elements arranged as in the claim, and absent anticipatory disclosure in Heuscher of each and every element of the claimed invention arranged as in the claim, Heuscher cannot be anticipatory.

Additionally, where the Examiner relies upon an inherency argument, Appellant respectfully submits that the Examiner has not shown with absolute specificity that the claimed

limitation is a necessary feature or result of Heuscher.

Furthermore, Appellant respectfully submits that each and every element of the claimed invention must be considered as presented, and cannot be recharacterized in a manner that is contrary to the explicit description provided by the specification as filed.

In view of the foregoing, Appellant submits that the Examiner's rejection of Claims 1-30 is improper.

For the reasons cited above and for the additional reasons in the Appeal Brief, Appellant respectfully submits that this application is in condition for allowance and requests reversal of the outstanding rejections and early allowance of this application. If there are any additional charges with respect to this Appeal or otherwise, please charge them to Deposit Account No. 07-0845 maintained by Appellant's attorneys.

Respectfully submitted,

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